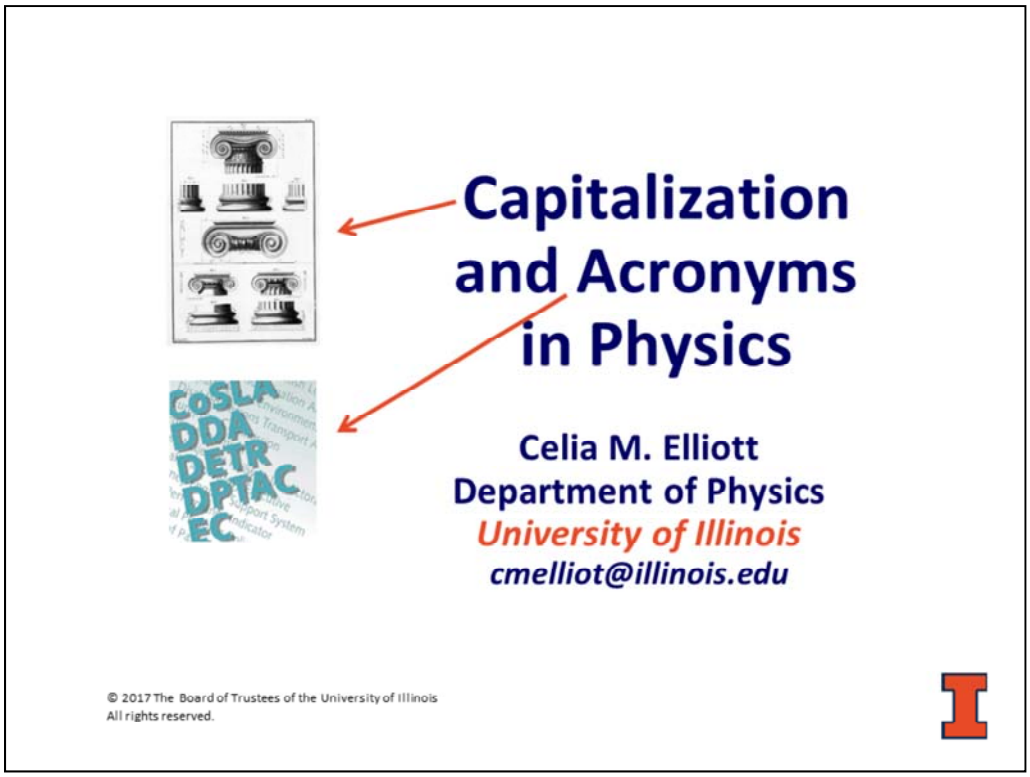
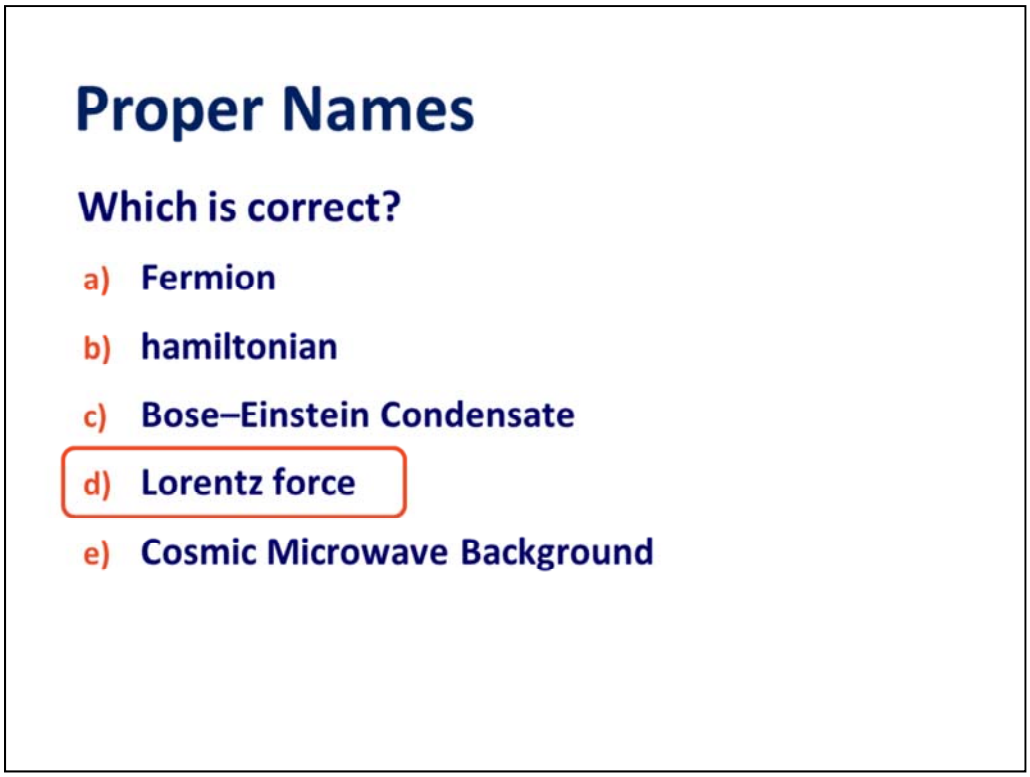


Practice your mastery of capitalization and the use of acronyms in physics.

Proper Names

Which is correct?

a) Fermion
b) hamiltonian
c) Bose–Einstein Condensate
d) Lorentz force
e) Cosmic Microwave Background



Why the other answers are wrong:

a) When a proper noun is used to name an entirely new class of things, the new class is a common noun and is not capitalized. Further, the names of subatomic particles are not capitalized.

b) The two exceptions that I can think of to a) 1 are Hamiltonian and Lagrangian.

c) Only proper nouns are capitalized; *condensate* should be written lower case.

d) Physical phenomena are not capitalized; e.g., ponderomotive force, turbulence, supernovae Although some authors capitalize *Cosmic Microwave Background*, as if it were a proper noun such as Milky Way or Atlantic Ocean, most style guides show it as written lower case.

Units of Measure

Which is correct?

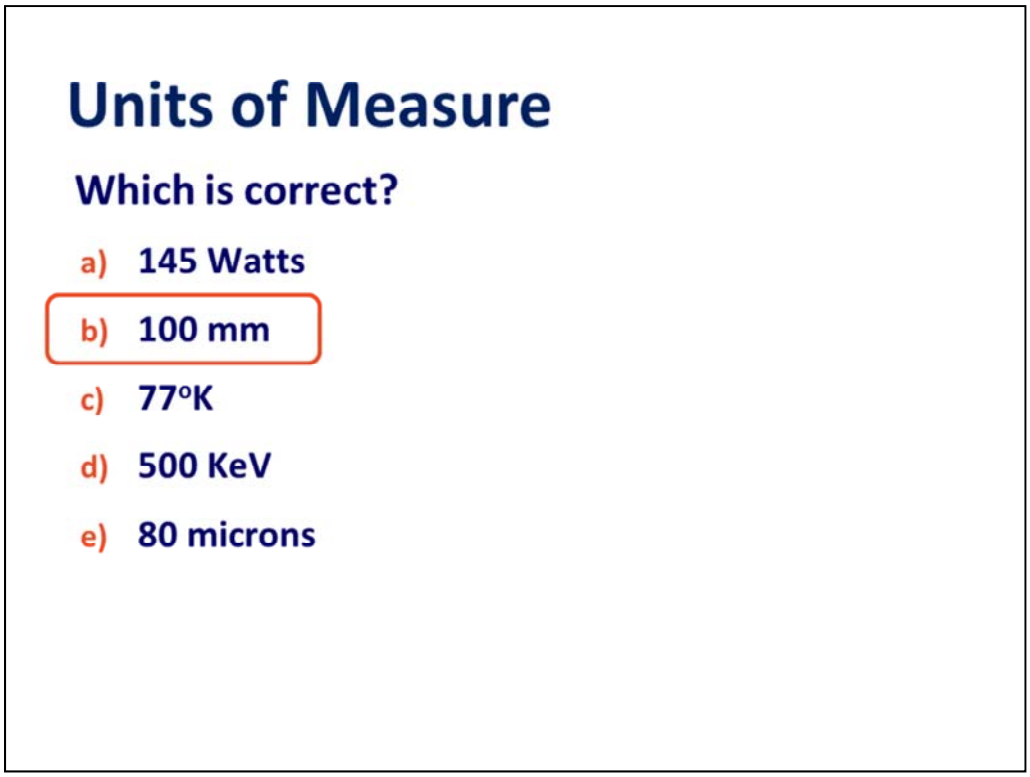
a) 145 Watts

b) 100 mm

c) 77°K

d) 500 KeV

e) 80 microns



Why the other answers are wrong:

a) (i) Watt is not capitalized when it is spelled out as a word; only the abbreviation is capitalized. (ii) Units of measure are always abbreviated following an exact number.

c) The kelvin is an absolute unit, not a scale. The degree sign (°) is used only for Fahrenheit and Celsius temperature scales.

d) The "k" that indicates "kilo" (thousands) is ***never*** written upper case.

e) Units of measure are always abbreviated when they follow an exact number.

Elements and Nuclides

Which is correct for an isotope of helium?

a) Helium-3

b) helium-3

c) ^{3}He

d) He_{3}

e) He^{3}

Elements and Nuclides

Which is correct for an isotope of helium?

a) Helium-3

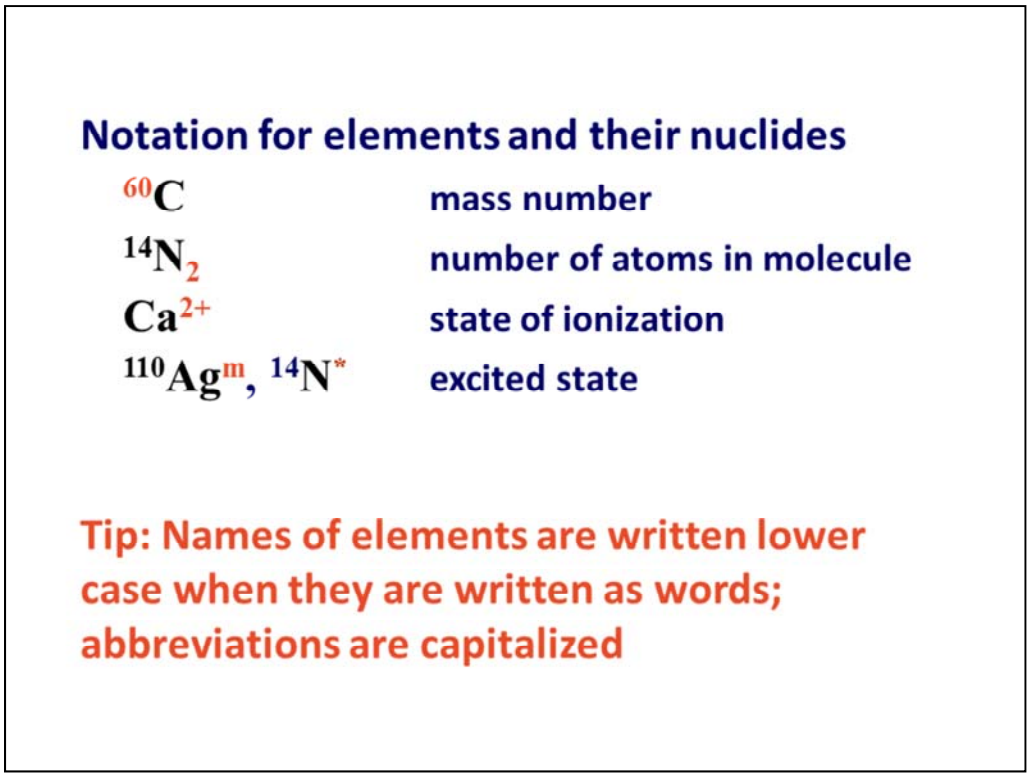
b) helium-3

c) ^{3}He

d) He_3

e) He^3

The mass number of an element is indicated by an anterior superscript.

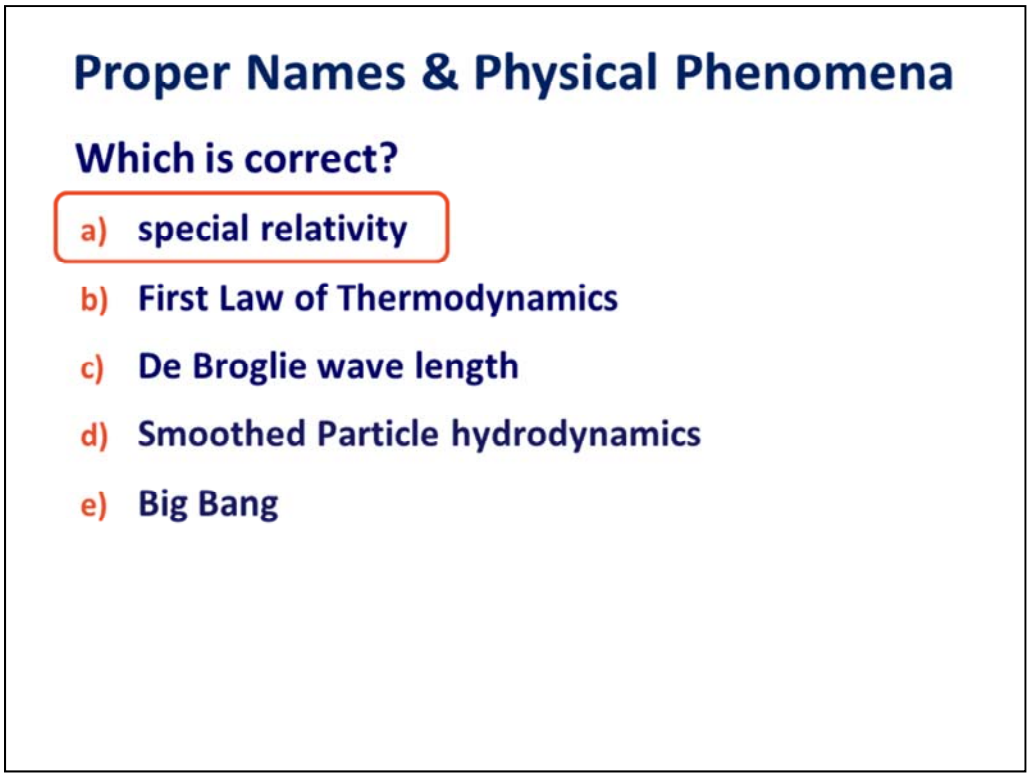


The notation for elements and their nuclides was formalized by the Union of Pure and Applied Physics in the late 1960s. Papers published before that date used a variety of notation, which would now be considered wrong or nonstandard.

Proper Names & Physical Phenomena

Which is correct?

a) special relativity
b) First Law of Thermodynamics
c) De Broglie wave length
d) Smoothed Particle hydrodynamics
e) Big Bang



Why the other answers are wrong:

b) Laws are not capitalized.

c) The French physicist who made groundbreaking contributions to quantum theory was Louis-Victor-Pierre-Raymond, 7e duc de Broglie. The “de” should be written lower case. And “wavelength” is one of three *wave* words that is written closed.

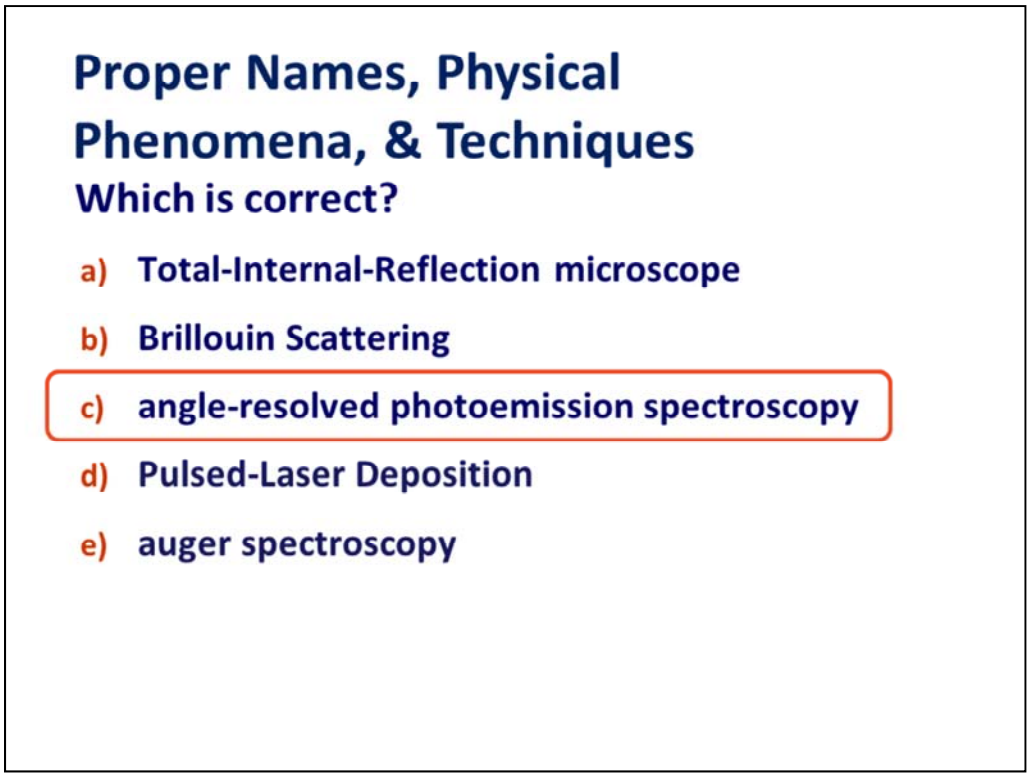
d) Physical phenomena or methods are not capitalized.

e) Same as cosmic microwave background.

Proper Names, Physical Phenomena, & Techniques

Which is correct?

a) Total-Internal-Reflection microscope
b) Brillouin Scattering
c) angle-resolved photoemission spectroscopy
d) Pulsed-Laser Deposition
e) auger spectroscopy



Why the other answers are wrong:

a) The names of apparatus are not capitalized (e.g., diffractometer, interferometer, atomic force microscope).

b) The names of physical phenomena are not capitalized, unless they contain a proper noun used as an adjective. In this case, *Brillouin* (French physicist Léon Brillouin) should be capitalized and *scattering* should not.

d) The names of physical processes are not capitalized, unless they contain a proper noun used as an adjective. (See (b).)

e) The method is named after Pierre Vincent Auger, who is credited with discovering the Auger effect. (The effect was actually discovered by Lise Meitner in 1922; Auger discovered it independently somewhat later.)

Acronyms

Which is correct?

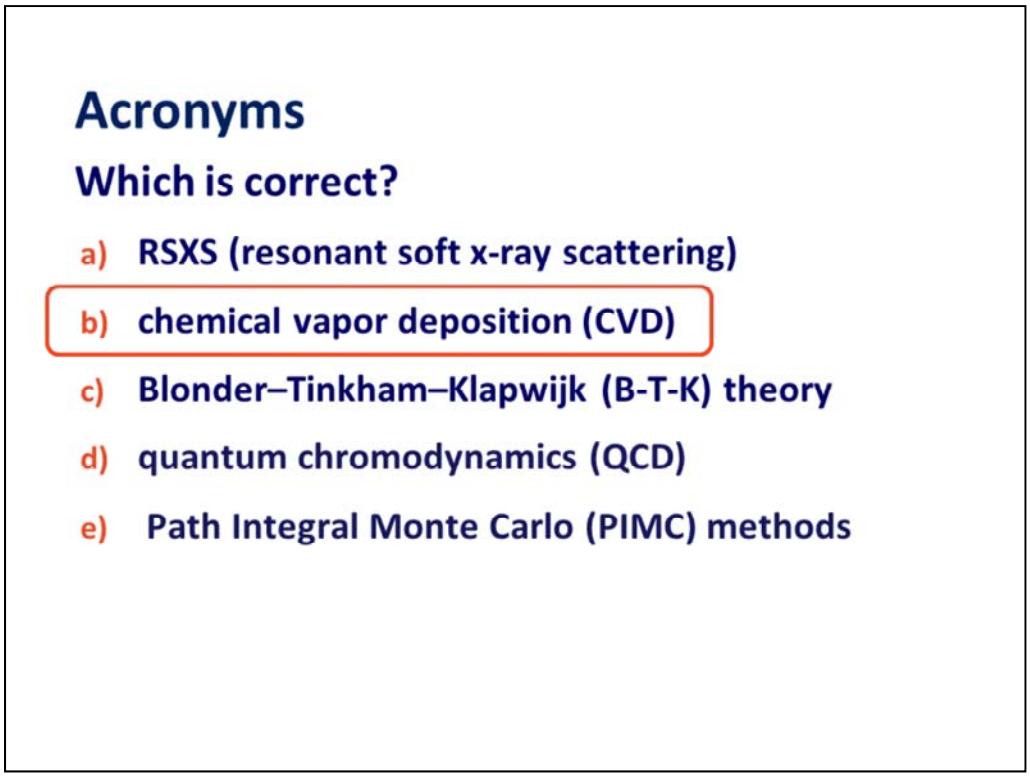
a) RSXS (resonant soft x-ray scattering)

b) chemical vapor deposition (CVD)

c) Blonder–Tinkham–Klapwijk (B-T-K) theory

d) quantum chromodynamics (QCD)

e) Path Integral Monte Carlo (PIMC) methods



Why the other answers are wrong:

a) Spell out the words first, and then put the acronym in parentheses.

c) Punctuation is not used in acronyms. Periods are occasionally (very occasionally) used in abbreviations. Refer to the *AIP Style Manual* for abbreviations using periods (e.g., N.B., H.c.)

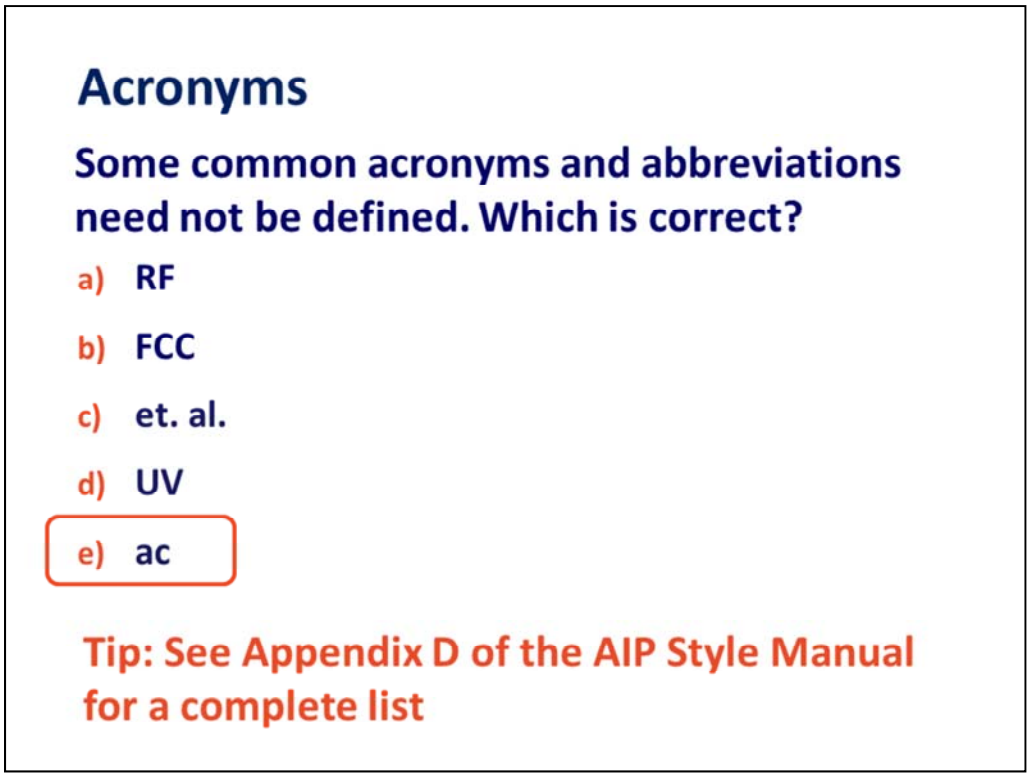
d) Some acronyms are so widely recognized that they do not require definition; QCD is one. Others include BCS, NMR, DNA, rpm; refer to the *AIP Style Manual* for a complete list.

e) Only the proper noun (Monte Carlo) is capitalized in the spelled-out version of the acronym.

Acronyms

Some common acronyms and abbreviations need not be defined. Which is correct?

a) RF
b) FCC
c) et. al.
d) UV
e) ac



Why the other answers are wrong:

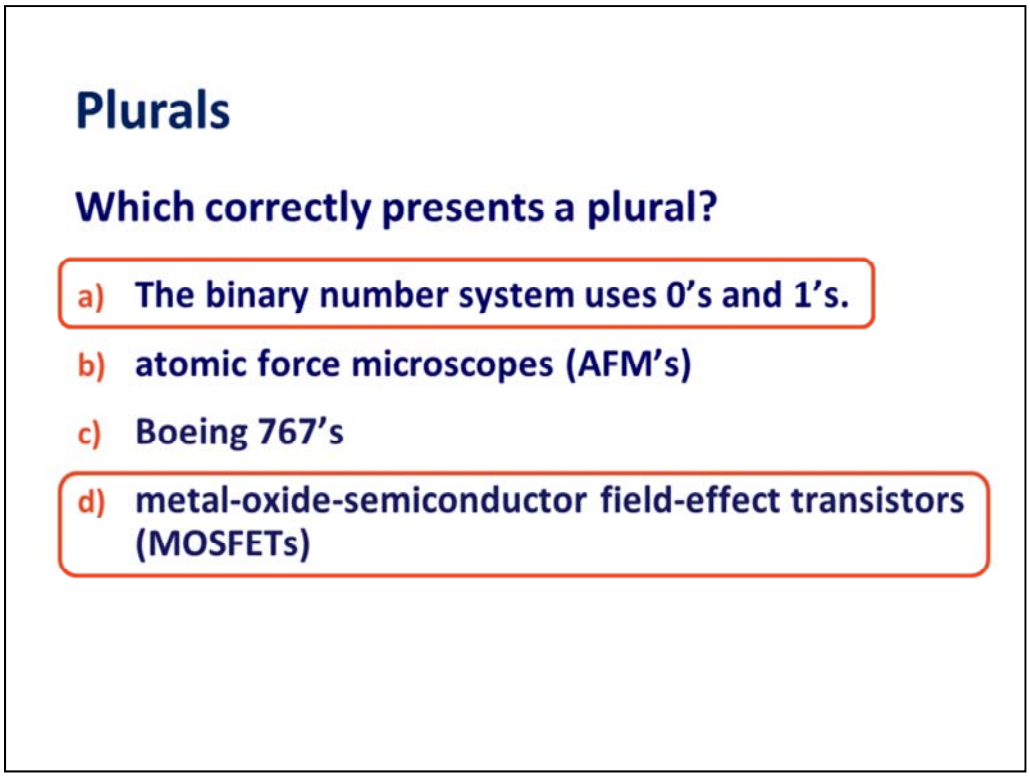
a), b), and d) should not be capitalized.

c) The abbreviation stands for the Latin term *et alii* (*and others*). The *et* is not an abbreviation, so no period should be used after *et*; *al.* IS an abbreviation—hence, the period.

Plurals

Which correctly presents a plural?

a) The binary number system uses 0's and 1's.
b) atomic force microscopes (AFM's)
c) Boeing 767's
d) metal-oxide-semiconductor field-effect transistors (MOSFETs)



Why the other answers are wrong:

b) Do not use an apostrophe to make an acronym plural; just add a lower-case letter *s*.

c) Do not use an apostrophe to make a number written as more than one numeral plural; just add a lower-case letter *s*.

To recap…

- Write whole words lower case*; capitalize abbreviations (generally)
- Capitalize proper nouns when used as adjectives
- Don't capitalize particles, theories, physical phenomena, apparatus, or techniques*
- Define acronyms at first use
- Don't start a sentence with an acronym, symbol, or number written in numerals
- Just add an *s* to make an acronym plural
- When in doubt, write it out!

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http://physics.illinois.edu/people/Celia/

*unless it's a proper noun (name of a specific person, place, or thing)

NOTES: